

XLIX.—Notes on the Tabanidæ of the Australian Region.  
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## TABANINÆ.

## TABANUS, Linn.

This paper is based on the material in the Brit. Mus. Coll., on a small collection of flies sent me by Mr. Froggatt for identification, which he kindly allows me to retain and add to the National Collection, on a number of Tabanidæ sent me by Mr. Wainwright for identification, on a few Tabanidæ in Diptera sent me by Mr. French from the Melbourne Museum to work out, and, lastly, on the Tabanidæ belonging to the German Entomological Museum in Berlin sent me some months ago by Herr Schenkling, which I had promised to describe, the results to be published by him in his 'Supplementa Entomologica.' I had already received from him a proof of the MS. on the species of *Tabanus* from the Palearctic Region in the above-mentioned museum just before the war broke out, which must, of course, be laid aside till the conclusion of peace. Meanwhile, the editors of the 'Annals' have kindly undertaken to publish these notes, in which will be included species from the Celebes eastward, including Tasmania and outlying islands; the species from New Guinea have already been dealt with in my paper in 'Résultats Expedition Sci. Néerlandaise Nouv. Guinée,' ix. (3) 1913. The New Zealand species I propose to describe separately, as they appear to have little affinity with those of the mainland.

Very little work has been done in this family from this region since Macquart and Walker's time (1838-1856). In 1911 Mr. Froggatt mentioned a few species in 'March Flies.' Mr. F. H. Taylor, in Austr. Inst. Trop. Med. 1911, published 1913, described several new species and Miss Summers others in the Ann. & Mag. Nat. Hist. (8) x. (1912). Several of these new species, however, prove to be synonyms of older species (see Mr. Austen on Mr. Taylor's paper in Ann. & Mag. Nat. Hist. (8) xiii. 1914). This is not surprising, as, unless one has access to the types, it is almost impossible to identify species from the descriptions by Macquart, Walker, and Bigot. Having been able to examine the majority of these authors' types in the British and Paris Museums and in the late Mr. Verrall's collection, I am

giving redecriptions of them, in the hope that they may prove of some service to workers in Australia and enable them to name new species with more certainty; there must be a great number of such species in the newer districts of Australia, such as Northern Queensland.

For the classification of groups see my paper on the *Tabanus* species of the Oriental Region in 'Indian Records,' iv. no. vi. (1911). The original pagination is used for Macquart's Dipt. Exot. Nomenclature of colours is taken in many instances from Ridgway's work on Colour Standards (1912). Where the eyes are not mentioned, they are bare and devoid of pubescence.

#### Group IV.

Forehead with no callus.

*Tabanus nemotuberculatus*, ♀, sp. n.

Type (female) in Mr. Froggatt's Coll. from Cape York, Queensland, 30. 2. (1906), and another female from S. Queensland (Dr. T. L. Bancroft), 1908, in Brit. Mus. Coll.

This type is not in very good condition, but may easily be recognized by the shading on veins of wings and by the absence of any frontal callus on forehead. Abdomen narrow, obscurely ferruginous. Antennæ and legs the same colour. Palpi short and stout.

Length 10 mm.

Face and forehead honey-yellow, the former with some greyish tomentum. Palpi a shade darker in colour, almost the same width throughout, ending in an obtuse point. Antennæ ferruginous, slender, with a very slight angle or tooth. Forehead parallel or almost wider anteriorly, about four times as long as it is broad anteriorly. Thorax darker than abdomen, covered with some greyish tomentum. Scutellum is identical. Abdomen (denuded) dull ferruginous. Legs same colour, a little darker on tarsi. Wings grey, fore border yellowish brown, and every longitudinal vein shaded brown; short appendix present.

The other female has the wings almost clear. Abdomen covered with greyish tomentum and with short yellowish hairs intermixed with black ones.

*Tabanus nemopunctatus*, ♀, sp. n.

Type (female) from Dunk Island, Queensland (Bunfield), 15. 1. 1902, in Mr. Froggatt's Coll.

A species at once distinguished by the absence of any calli on the forehead, which, together with the abdomen, legs, and palpi, is honey-yellow in colour.

Length 12 mm.

*Face* honey-yellow, with some greyish tomentum. *Palpi* same colour, long and slender, stouter at base. Beard yellow, very scanty. *Antennæ* ferruginous, the first two joints paler in colour, the third joint with a small angle or tooth. *Forehead* parallel, with golden-yellow pubescence, about five times as long as it is broad. *Thorax* dark, covered with short fulvous pubescence and tomentum of the same colour. *Abdomen* stout, short, honey-yellow, appearing darker at apex, as the pubescence at the sides is black, elsewhere golden-coloured. *Legs* honey-yellow, tarsi blackish, pubescence golden-yellow on femora, elsewhere chiefly black. *Wings* clear yellow on fore border; long appendix present.

#### Group VII.

Abdomen with one or more stripes, usually continuous.

*Tabanus cinerescens*, MacLeay, King's Survey Coast Australia, ii. p. 467 (1826); Austen, Ann. & Mag. Nat. Hist. (8) xiii. p. 265 (1914).

*Tabanus cinerascens*, King, see Kertész, Cat. Dipt. iii. p. 234 (1908); Wied. Auszweifel. Ins. ii. p. 647 (1830).

*Tabanus tetrilineatus*, Taylor, Australian Institute Tropical Medicine Report for 1911, p. 68, pl. xiv. fig. 20 (1913).

In Brit. Mus. Coll. are specimens from New South Wales (*Hunter*); in German Ent. Museum females from Palmerston, N. Australia; in Mr. Wainwright's Coll. females from Port Darwin, S. Australia.

MacLeay's original description was of the vaguest and shortest kind, as follows:—

"Ashy grey, ferruginous, underneath whitish. Wings hyaline, towards the base subluteous. Abdomen with an ashy-grey median stripe and four ashy-grey spots on each side."

Fortunately the species is easily identified, even from the above few words. The following description is based on the fresh specimens:—

A large reddish-brown species, with reddish legs and antennæ and yellow palpi. Abdomen with a faint grey tomentose median stripe and grey tomentose side-spots.

Length 18–19½ mm.

*Face* covered with yellowish tomentum and with some

fine white hairs. Beard white. *Palpi* pale yellow, stout, ending in an obtuse point with black pubescence. *Antennæ* reddish, darker at apex, the first two joints with black hairs, the third with a distinct tooth situated about halfway up on the upper border of the first division. *Forehead* same colour as face, broad, about four times as long as it is broad, the frontal callus reddish brown, shining, large, nearly square, not reaching the eyes, posteriorly becoming narrow, with a short spindle-shaped extension. *Thorax* reddish brown, with darker stripes, and between these, yellowish-grey tomentose stripes with yellowish-grey pubescence, sides covered with grey tomentum. *Scutellum* lighter, reddish brown, with some yellowish-grey tomentum, and with black pubescence. *Abdomen* reddish brown, with black pubescence; the median narrow stripe composed of bluish-grey tomentum is often indistinct, the spots on each side are discernible on every segment except the first and last, and more distinct, being clothed with white hairs; apex of abdomen usually darker in colour; underside reddish yellow at base, becoming blackish on fore borders of the segments and yellowish on posterior borders, the whole covered with dense, short, whitish pubescence uniformly reddish with white hairs. *Wings* large, tinged yellow; veins brown.

*Tabanus transversus*, ♂ ♀, Walker, List Dipt. v. p. 256 (1854).

Type (male), type (female), and three other males presented by Col. Bolton.

A small brown species with a grey median stripe and segmentations on abdomen. *Forehead* with a small yellow callus. *Antennæ* and legs yellowish.

Length, ♂ 9, ♀ 10 mm.

♀. *Face* covered with yellowish-grey tomentum, a few pale hairs in centre. Beard pale yellow. *Palpi* very slender, nearly the same width throughout, pale yellow with rather thick black pubescence. *Antennæ* the same colour, blackish at apex, the first two joints with pubescence, the third with a distinct angle. *Forehead* same colour as face, about three times as long as it is broad anteriorly; it is narrowed at the vertex; frontal callus yellowish, small, not reaching eyes and with no lineal extension. *Thorax* cinnamon-brown with darker brown stripes. *Scutellum* same colour. *Abdomen* cinnamon-brown, with some darker irregular blotches of colour, the median stripe very distinct, composed of long cone-shaped spots, beginning from the second segment, covered with greyish tomentum, the segmentations narrowly

greyish, pubescence on dorsum chiefly composed of very short pale hairs; underside yellowish. *Legs* uniformly cinnamon-brown. *Wings* clear, very faintly shaded on cross-veins; stigma and veins yellowish; no appendix.

♂ is similar. Eyes with large facets on the upper two-thirds of their surface. Palpi composed of three joints, the last two almost equal in length, with long black hairs, larger and more slender than is usual in males.

*Tabanus reducens*, ♀, Walker, Proc. Linn. Soc. iv. p. 103 (1860); Ricardo, Records Indian Museum, iv. no. vi. p. 267 (1911).

Type (female), from Macassar, the other female from Celebes (Wallace Coll., 1857-1858).

A large blackish species, with a median well-marked grey stripe on abdomen, in general appearance not unlike *Tabanus mandarinus*, Schiner, but distinguished by the open first posterior cell of wings.

Length 20-23 mm.

*Face* covered with ashy-grey tomentum and with long whitish hairs. Beard white. *Palpi* stout at base, ending in a long obtuse point, pale yellowish, covered with grey tomentum and with black pubescence. *Antennæ* tawny at base, the third joint dusky, long, with a small tooth at base. *Forehead* covered with grey tomentum, narrow, about nine times as long as it is broad anteriorly; frontal callus dark chestnut-brown, long and narrow, not reaching the eyes, with a short lineal extension. *Thorax* blackish, with two fairly distinct grey tomentose stripes, hairs on shoulders black, posteriorly at sides white. *Scutellum* the same colour, covered with grey tomentum. *Abdomen* blackish, the grey tomentose median stripe very distinct, composed of elongated spots forming a united stripe; the seventh segment has no spot, traces of side-stripes are very apparent; formed of spots which do not coalesce; underside blackish, reddish at sides, with narrow grey segmentations. *Legs* blackish, the femora covered with grey tomentum; the tibiae tawny; pubescence on femora white, elsewhere black. *Wings* large, clear; veins and stigma yellowish.

*Tabanus similis*, ♀, Macquart, Dipt. Exot., Suppl. iv. p. 335 (1849).

Type (female) in Verrall Coll., from Tasmania, in poor condition.